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7 A class of 10 students includes Abby and Ben.

(a) A group of 5 students is to be selected from the class. Find the number of possible groups in the following cases.

(i) There are no restrictions. [1]

(ii) The group includes both Abby and Ben. [2]

(iii) The group includes either Abby or Ben, but not both. [2]

(b) All 10 students are arranged in a line. How many arrangements are possible if there are exactly three students between Abby and Ben? [3]

8 Solve the equation $\cot^2 2\theta + 3\operatorname{cosec} 2\theta = 9$ for $-90° \leqslant \theta \leqslant 90°$. [6]

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